Prehistory of the Americas

SECOND EDITION

STUART J. FIEDEL

CAMBRIDGE
UNIVERSITY PRESS

PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE
The Pitt Building, Trumpington Street, Cambridge, United Kingdom

CAMBRIDGE UNIVERSITY PRESS
The Edinburgh Building, Cambridge CB2 2RU, UK http: //www.cup.cam.ac.uk
40 West 20th Street, New York, NY 10011-4211, USA http: //www.cup.org
10 Stamford Road, Oakleigh, Melbourne 3166, Australia

First published 1987
Reprinted 1988 (twice), 1989
Second edition 1992
Reprinted 1992, 1993, 1994, 1996, 1997, 1999

Typeset in Times

A catalogue record for this book is available from the British Library

Library of Congress Cataloguing-in-Publication Data is available

ISBN 0-521-41532-2 hardback
ISBN 0-521-42544-1 paperback

Transferred to digital printing 2003

Contents

Illustrations

1

The development of American archaeology: a brief review

America and its inhabitants suddenly emerged from prehistory into history, that is, the period in which events have been recorded in written documents, when Christopher Columbus landed on an island in the Bahamas that he named San Salvador (now identified as either Samana Cay or Watling Island). Columbus was not the first European to reach American shores; archaeological finds in Newfoundland have confirmed accounts in the Norse sagas of Viking expeditions to North America around A.D. 1000. However, the Vikings did not succeed in establishing permanent settlements on the American mainland. Even their initially prosperous colony in Greenland had perished by the mid-fifteenth century, unable to cope with climatic changes brought on by the Little Ice Age. As a legacy of their brief American venture, the Vikings left us the first description of Native Americans, whom they called "Skraelings." These people, whose encounters with the Vikings were hostile, were probably Eskimos, and Algonquian-speaking Indians. Vikings who dug into the ruins of an Eskimo house in search of imagined treasures were the first Europeans known to have excavated an American archaeological site (Rowlett 1982). Even though white falcons, furs, and other items that the Vikings obtained in Greenland or farther west were traded southward into Europe, no one seems to have been very inquisitive about their point of origin. Several hundred years later, Columbus's reports of his discoveries evoked quite a different response from Europeans who had by then become acquainted with, and greedy for, the silks of China and the spices of the Indies. As is well known, the Spanish crown had financed Columbus's expedition in the hope that, by sailing west, he might find a shorter route to the Orient. Columbus himself was stubbornly convinced that he had succeeded in this mission. If the islands he had discovered were indeed the Indies, then the inhabitants must be "Indians." Thus was coined the totally inappropriate name by which the Native Americans have been collectively known ever since. Actually, "Native Americans," which has recently become fashionable, is not much of an improvement, because "America" commemorates the Florentine navigator, Amerigo Vespucci, who explored the South American coast some years after Columbus's voyages. Having duly noted the inappropriateness of both labels, I will

proceed to use them interchangeably throughout this book, because there is no good alternative to them.

Before long, the European sea pilots who followed in Columbus's wake realized, as he had not, that he had stumbled upon a hitherto unknown "New World." America would not yield the coveted Oriental luxuries, but it possessed riches of its own. The gold of Mexico attracted Cortes and his small army, who managed, with the backing of rebellious subject peoples, to destroy the Aztec empire in 1521. The ruthless tactics of Pizarro toppled the empire of the Incas in 1532, allowing Spain to plunder the gold and silver of the Andes.

The Catholic Church enthusiastically supported these conquests of the heathens and aided in the destruction of their civilizations, melting down idols, burning sacred books, and razing temples. On the one hand, there were some priests, like Bartolomé de la Casas, who sympathized with the plight of the enslaved Indians. On the other hand, there were some churchmen who argued that the Indians were mere brutes, who should not even be offered salvation. They were not mentioned in the biblical list of the descendants of Adam; from this, one could conclude that they were not really human, and thus had no souls to be saved. This matter was resolved by the issuance in 1537 of a papal bull affirming the Indians' humanity.

But if the Indians were human, who were they, and how had they come to live in America? Finding apparent similarities in Indian customs or languages to those that were known, or imaginatively attributed to, peoples of the Old World, theorists variously identified the Indians as lost Israelites, Phoenicians, Greeks, Scythians, Hindus, Tartars, Welshmen, and so on. The theory of their origin, which is unanimously accepted today by archaeologists and anthropologists, was first proposed in 1590 by Fray Jose de Acosta, a Spanish priest. He suggested that the Indians were descended from hunters who had crossed into America from northern Asia. Considering how little was then known of the geography of northern Asia, this was a remarkably insightful speculation.

The natives encountered by the English and French colonists in eastern North America were not as highly organized as the Aztecs or Incas. Ironically, the absence of a centralized political hierarchy made these Indians more difficult to subdue; it also proved impossible to make profitable use of them as slaves. As late as the 1770s, the Iroquois of western New York were still a military power to be reckoned with; but they allied themselves with the British, the losing side in the Revolutionary War. The British had sought to mollify the Indians by forbidding white settlement west of the Appalachians. After the war, however, whites pushed through the mountains into the Ohio territory. They were astonished to find there large numbers of geometric earthworks and mounds, often containing skeletons. Such mounds were also present, but not so numerous, in some of the original

areas of white colonization east of the mountains. One burial mound in Virginia was investigated by that all-around Enlightenment genius, Thomas Jefferson, in 1784. His aim was to determine whether the burials had all been deposited at once, or in stages. Jefferson's use of excavation to solve a problem rather than hunt for treasure, his careful excavation technique, and his cautious interpretation of the evidence, mark this as the first scientific archaeological research project in the Americas (Jefferson 1801). It was not to be equalled until more than a century had passed.

Jefferson tentatively concluded that the Indians' ancestors had raised the mounds and buried their dead in them. However, others attributed the mounds to a vanished civilized race, who had been exterminated by the Indians. The discovery of mounds in the Ohio and Mississippi valleys, which were larger and more complex than those previously known in the east, intensified the debate over the mound-builders' identity, and the mounds became the focus of a wildly imaginative literature in the early nineteenth century (Silverberg 1968). One avid reader of mound-builder fantasies was Joseph Smith, whose Book of Mormon, with its account of Israelite migrations to North America, seems to reflect his familiarity with this literature.

Why were nineteenth-century Americans so enthralled by the idea of a vanished race, and so reluctant to credit the mounds to the Indians? In part, this was a reasonable position to take; after all, at the time, there were no Indians building mounds. Those who attributed the mounds to a vanished race were apparently unaware of sixteenth- and seventeenth-century accounts, by French and Spanish explorers, of mound construction by Southeastern Indians. There was also a strong element of racism in the mound-builder myths. The westward expansion of whites entailed the displacement and annihilation of Indians. Any feelings of guilt or moral indignation that this process aroused might be assuaged if it were proven that the Indians themselves had violently wrested the land from its original inhabitants, the more civilized, and presumably white-skinned, mound-builders. White Americans, so acutely aware of their recent arrival from overseas, derived a peculiar psychological satisfaction from imagining the ancient landscape populated with heroic white men. The same feeling still exists today, as shown by the popular success of recent books that advance farfetched claims that Libyans, Iberians, Celts, and so on, wandered about in America 3,000 years ago.

In 1820, the first comparative study of the Ohio mounds, by Caleb Atwater, postmaster of Circleville, was published by the American Antiquarian Society, which had been founded in Boston eight years earlier. Atwater provided accurate descriptions of many sites, but he also lapsed into groundless speculation, suggesting that "Hindoos" had built the mounds. In 1848, the Smithsonian Institution published "Ancient Monu-

ments of the Mississippi Valley," by E. G. Squier and E. H. Davis. Squier, a newspaperman and politician, and Davis, a physician, had carefully mapped and accurately drawn many Ohio mounds, and had also done some excavation. They had explicitly set out to avoid speculation; nevertheless, they theorized that the mounds were the work of a civilized, pre-Indian race, which had migrated southward under "incessant attack" by "hostile savage hordes."

In 1881, Congress forced John Wesley Powell, who preferred to spend the limited funds of his recently created Bureau of Ethnology on studies of living Indians, to devote $5,000 a year to research on the mounds. Powell chose Cyrus Thomas, a naturalist from Illinois, to organize a project that, it was hoped, would finally resolve the question of the mound-builders' identity. In the bureau's 12th Annual Report (1894), Thomas presented, in 730 pages, the results of his team's excavations. He interpreted the evidence as showing that a number of different cultures were responsible for the mounds in different areas, and that these mound-building groups were the immediate ancestors of historic Indian tribes. Archaeologists now realize that Thomas went too far in his attempt to link the prehistoric cultures to historic groups. For example, his suggestion that the Cherokees had built not only the mounds of Tennessee and North Carolina, but also some of the Ohio earthworks, is no longer accepted. Nevertheless, Thomas had succeeded in establishing that the Indians, not a mythical lost race, had built the mounds.

Thomas's project was symptomatic of a major organizational change in American archaeology that occurred toward the end of the nineteenth century. Archaeology was no longer solely the pastime of amateurs. Increasingly, the field was dominated by professionals, working out of museums, such as the Smithsonian and Peabody, and the universities. The involvement of the Bureau of Ethnology in research on the mounds is also an example of the close linkage that has developed in the United States between cultural anthropology and archaeology, a situation that contrasts with the separate development of these disciplines in most European countries.

THE INFLUENCE OF EVOLUTIONARY THEORY

The year 1859 was a major turning point in the study of human origins. In his *Origin of Species*, Darwin presented his theory of evolution by natural selection. He only implied in this book that humans had evolved like other organisms, but in 1871 he offered a more extensive discussion of human evolution in *The Descent of Man*. Also in 1859, a commission of English scholars visited France to examine the stone tools that Boucher

de Perthes, a customs official, had collected from gravel deposits in the valley of the Somme. The Englishmen concluded that Boucher de Perthes was right; his discovery of these man-made artifacts in association with fossils of extinct animals showed that man had been on the earth for a very long time, much longer than the mere 6,000 years allowed by the traditional Bible-based chronology. The Neanderthal skull, discovered in Germany in 1856, was now recognized as a pre-*sapiens* human, and other examples of the same primitive-looking species began to turn up in French cave excavations.

The intellectual excitement generated by the radical new perspective on human origins spread to America, where it sparked the search for "Early Man." Crudely chipped, primitive-looking stone tools, such as those found in the Trenton Gravels of New Jersey in 1876, seemed comparable in form and age to European Paleolithic handaxes. Claims of great antiquity were also advanced for human skeletal remains, such as those found at Lagoa Santa in Brazil, which seemed to be contemporaneous with Ice Age mammals. Although the idea of very ancient occupation of the Americas was initially supported by prestigious scholars such as Frederic W. Putnam, the curator of the Peabody Museum, it had fallen into disrepute by the turn of the century. William Henry Holmes demonstrated in 1892 that the supposed Paleolithic tools were actually rejected rough-outs, left at quarries by comparatively recent Indians. Aleš Hrdlička, the Czech-born physical anthropologist at the U.S. National Museum, so effectively discredited alleged early man finds that archaeologists were reluctant to attribute ages greater than a few thousand years to their finds, lest they be subjected to his withering criticism. It was not until 1926, when fluted points were found embedded within the skeletons of extinct giant bison near Folsom, New Mexico, that the coexistence of man with Ice Age mammals in America was proven, thus pushing man's arrival back to at least 10,000 years ago.

CULTURAL EVOLUTION

At about the same time that Darwin was publishing his theories on biological evolution, other scholars were generating ideas about the evolution of human societies. The discovery of the Americas played a major part in the development of the concept of progressive stages of social evolution. As early as 1590, Indians were being viewed by European scholars as representatives of a developmental stage through which ancestral Europeans had once passed. In that year, engravings based on paintings by John White were appended to Thomas Hariot's *A Briefe and True Report of the New Found Land of Virginia.* White's imaginative portrayals of ancient Britons showed them naked and tattooed, just like the Virginia Indians depicted in the book. The accompanying caption noted that "the inhabitants

of the great Bretanne have been in times past as sauvage as those of Virginia." By the 1830s, it had been suggested that mankind had risen from hunting and gathering, first to agriculture and pastoralism, then to urban civilization. In 1877, Lewis Henry Morgan published *Ancient Society*, in which he proposed that mankind had progressed through three stages: savagery, barbarism, and civilization. Lower, middle, and upper phases of savagery and barbarism were separated by technological, economic, and social innovations, such as the bow and arrow, stock-raising, pottery, and the patriarchal family. Morgan and the other evolutionist anthropologists of the late nineteenth century believed that "primitive" peoples had somehow become fixed at developmental stages through which the more advanced cultures had passed. Thus, the Australian aborigine represented a living ancestor of the Victorian in much the same way that the platypus was a living fossil that illuminated the ancestry of the placental mammals. It should be noted that the evolutionists' stages were based primarily on ethnological comparison of still-extant societies, rather than on archaeological evidence. The difference between the approach of the cultural evolutionists and that of Darwin should also be stressed. Darwin's great achievement was not merely to postulate the gradual evolution of life forms – this had already been proposed by Lamarck, among others – but to suggest a mechanism, a process by which change had occurred, i.e., natural selection of those organisms best adapted to their environment. In contrast, the evolutionist anthropologists ranked societies along an evolutionary scale of complexity, but they could offer no convincing explanation of the apparent tendency of societies to become larger and more complex over time.

THE BOASIAN REACTION

By the early 1900s, as more ethnographic and archaeological data accumulated, it had become obvious that no amount of contortion could make them fit neatly into evolutionist schemes. Franz Boas, who had emerged through his work at the American Museum of Natural History and at Columbia University as America's foremost anthropologist, condemned evolutionism as unproductive speculation. He advised his students, who in their turn were to dominate American anthropology until the 1960s, to turn away from grand evolutionary schemes, and to concentrate instead on intensive collection of information on particular societies. Only after this phase of empirical research might it become possible to formulate general theories of cultural development.

Boas and his followers were interested in reconstructing regional prehistories, by tracing the spread of cultural traits, including technological devices, artistic motifs, myths, and rituals. By revealing similarities and

differences in items of past material culture, archaeology could contribute to this research program. However, its role, as perceived by the Boas school, was secondary to that of ethnology, which seemed to them to be just as effective a way of reconstructing the Indians' past. Hrdlička's and Holmes's discrediting of early man finds had resulted in a foreshortening of time perspective, so that it was widely believed that the Indians had arrived in America as recently as 5,000 years ago. Archaeologists tended to regard prehistoric artifacts as remnants from a brief, culturally static period preceding contact with whites. To take one illustrative example, a 1909 publication of the Museum of Natural History (Wissler 1909) contains photographic plates of artifacts excavated in New York City and Westchester County. They are grouped according to their presumed functions: knives, arrows, drills, pots, and so on. All are referred to as "Algonquian," on the assumption that they were made by the same people who were encountered by the first Europeans in the area. Today we can recognize some of the pictured artifacts as belonging to the period of contact or a few hundred years earlier, but others are now known to be as old as 8,000 years.

CREATING A CHRONOLOGICAL FRAMEWORK

Of course, in 1909 there was no way to obtain accurate dates for these finds. Early investigators of the Ohio mounds had noted that very old trees had taken root atop some of the mounds; by counting the annual growth rings of the trees, minimum ages could be assigned to the mounds themselves. Another technique, which today we would call "cross-dating," had been applied by Cyrus Thomas, who found objects of glass and brass in some mounds. These items, of European manufacture, must have been brought into the Southeast by Spanish or French explorers, so that the mounds in which they had been placed could not be earlier than the sixteenth century. Obviously, cross-dating with Europe was not applicable to pre-Columbian sites. The only other way to approach the very basic problem of dating was the slow construction of a relative chronology; however, little progress could be made in this direction until archaeologists realized the significance of stratigraphic superposition. Simply put, where layers or "strata," whether of geological or cultural origin, lie superimposed on one another, the lower strata are earlier, and the upper ones are later; so the lower you dig down, the farther back you are going in time. This principle had been recognized by geologists at the end of the eighteenth century, and was employed by European archaeologists by the 1860s, but except for a few excavations of stratified shell mounds on the Southeastern coast, the Aleutian Islands, and California, it was not incorporated into American archaeology until 1911. American archaeologists had neglected stratigraphic studies, in part because sites with clearly superimposed layers were rarely

encountered, and in part because of the general assumption that Indian cultures were not very old.

In 1911, Franz Boas encouraged one of his students, Manuel Gamio, to attempt to determine the relative ages of three different pottery styles which were represented among sherds collected from the surface of sites in the Valley of Mexico. One style was known to have been produced by the Aztecs, a second by the earlier Teotihuacan civilization; the age of the third was unknown. By digging a 7 m- (23 ft-) deep trench at Azcapotzalco, Gamio discovered that the third style was the earliest, for sherds of this type lay stratified below Teotihuacan potsherds which, as expected, occurred in the levels underlying those in which Aztec pottery was present. The earliest pottery is known today as "Formative."

In 1913, Nels Nelson, who had observed stratigraphic excavations in Europe, began to use stratigraphic techniques at sites in the Galisteo Basin of New Mexico. At Pueblo San Cristobal, he dug into a 3 m- (10 ft-) deep deposit, in which all the pottery types of the region were present in a vertical sequence. As there were no obvious layers in the soil, Nelson dug by arbitrary levels, bagging together all artifacts found within one-foot intervals. This arbitrary level method is still occasionally used today, particularly in situations where there are no discernible differences in soil color or consistency. However, arbitrary levels are likely to cut across natural layers; the result is mixing of material from different periods. Therefore, archaeologists today consider it preferable to excavate according to natural strata wherever these are apparent. An early example of such an excavation was carried out by Alfred Kidder at Pecos Pueblo, where he began to dig while Nelson was working at San Cristobal (Kidder 1924). Stratigraphic excavations were conducted at other Southwestern sites in the 1920s, and had become common elsewhere in the Americas by the end of the 1930s.

Both Nelson and Kidder made numerical tabulations of the potsherds of each recognized type that were recovered from each stratigraphic level; Kidder also noted the relative percentage frequencies of the pottery types. At both San Cristobal and Pecos, this procedure revealed small changes in relative frequencies of different types from level to level; these were best explained as the result of gradual change in the local culture through time, rather than abrupt replacement of one population by another. Nelson further observed that, while the quantities of some types remained about the same throughout his sequence, other types seemed to follow a sort of life cycle. Sherds of these types appeared in small numbers in lower levels, increased to maximum numbers in middle levels, then decreased toward the top of the stratigraphic sequence.

The life cycle of styles was the basis of another relating dating technique, seriation. Pioneering studies of pottery seriation were conducted in the Southwest by Alfred Kroeber (another Boas student) in 1915 and by Leslie

Spier in 1916. They observed that the relative frequencies of surface-collected sherds of distinct types varied from site to site. This variation allowed the sites to be dated, relative to one another. Seriation was further developed by James A. Ford, who began to apply the method to Southeastern sites in the 1930s.

Seriation dating is based on the observation that particular styles of pottery, and other artifacts, are made and used by only a few people at first. Later, they are adopted by increasing numbers of people, and alternative, competing styles become correspondingly less popular. After a time, the popularity of the new style wanes as others displace it, and ultimately it is no longer produced. Drawn on a graph, where time is the vertical axis and percentage frequency is the horizontal axis, the life span of a style will approximate to a lens or "battleship" shape. Seriation is most useful in comparing ceramic assemblages from sites that were occupied for brief periods and are close enough to one another to permit the assumption that they belonged to the same culture. The relative age of the sites can be determined by arranging paper strips, whose lengths correspond to the percentages of each pottery type in the total assemblage, so that the strips representing each type form either a complete or truncated vertical lens shape. In the example shown here, sites A through H have been arranged chronologically. Notice, however, that it is quite possible to invert the sequence, making A the earliest site instead of the latest. In order to fix the beginning and end of the seriated sequence, it is necessary either to find a stratified site, where two or more types are present in superimposed levels, or to cross-date recognizable artifacts found in association with the ceramics at one of the unstratified sites. In the Southeast, Ford was able to fix one end of his ceramic sequence by association with historic European trade goods.

Stratigraphy and seriation could provide only relative dates; but in 1929, absolute year-by-year dating became possible, though only in the South-

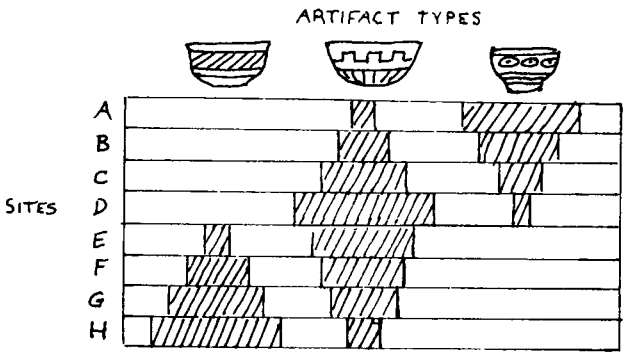

Fig. 1. Seriation graph.

west. For this, archaeologists could thank A. E. Douglass, an astronomer whose interest in the effects of sunspot activity on the earth's climate had led him, in 1913, to the study of tree rings. In the Southwest, fluctuations in rainfall caused variations in the thickness of the annual growth rings of coniferous trees. Each year, a pine tree adds another growth ring to the concentric pattern of rings, of varying width, which represent a year-by-year record of the tree's previous growth. In the arid conditions of the Southwest, wood was sometimes preserved for hundreds, even thousands, of years. Starting with trees that were still living, Douglass was able to push ever farther back in time, to about A.D. 1300, by matching up distinctive overlapping series of wide and thin growth rings. The prehistoric inhabitants of the Southwest had often used pine beams for the roofs of their houses, and Douglass applied the same counting method to build a "floating" chronology for these ancient samples. After some years of searching by archaeologists, in 1929 beams were found at Showlow Pueblo that allowed the floating chronology to be tied in to the established chronology, which was anchored to modern trees of known age. Today, archaeological dates based on tree rings extend as far back as 59 B.C. Tree ring dating of very old bristlecone pines in southern California has recently allowed the correction or "calibration" of carbon 14 dates (see below). Unfortunately, tree ring dating (dendrochronology) has not been widely practicable outside the Southwest, in regions where rainfall is more regular and growth rings are consequently less variable, and where a more humid climate causes wood to decay rapidly. However, in recent years progress has been made in ring dating of oaks in Europe and the Near East, and in dating of bald cypress trees in the Southeastern United States.

DEFINING ARCHAEOLOGICAL UNITS

It is easy to understand why, in the absence of absolute dating methods, archaeologists of the twenties and thirties were primarily concerned with the development of a chronological framework into which their material could be fitted. Another preoccupation of archaeologists of that period was the definition of archaeological entities. Their ethnologist colleagues had taken the "culture" as their unit of study. A culture was represented by a group of people with distinctive patterns of behavior and thought, a group conscious of their own separate identity, who usually spoke a language different from those of their neighbors. In some cases, the boundaries of the culture might correspond to those of a political entity, e.g., the Iroquois Confederacy. In other cases, e.g., the California Indians, a single culture might comprise numerous small, independent tribelets. Ethnologists noted that cultures in the same broad region shared certain basic similarities in their material culture, evidently as the result of their adaptation to the